LIMITING CONDITIONS FOR OPERATION

A. Primary Containment Power Operated Isolation Valves

1. During reactor power operating conditions, all primary containment isolation valves and all instrument line flow check valves shall be OPERABLE except as specified in 3.7.B.2.

2. With one or more of the primary containment isolation valves inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and within 4 hours either:

   a. Restore the inoperable valve(s) to OPERABLE status, or

   b. Isolate each affected penetration ~~by use of at least one deactivated automatic isolation valve secured in the isolated position,* or~~ flow path.*

*~~Isolation valves closed~~ Penetrations isolated to satisfy these requirements may be reopened on an intermittent basis under administrative control.

SURVEILLANCE REQUIREMENT

B. Primary Containment Power Operated Isolation Valves

1. The primary containment isolation valves surveillance shall be performed as follows:

   a. At least once per operating cycle the OPERABLE isolation valves# that are power operated and automatically initiated shall be tested for simulated automatic initiation and closure times.

   b. At least once per quarter:

      1) All normally open power operated isolation valves## shall be fully closed and reopened.

      2) With the reactor power less than 75%, trip main steam isolation valves individually and verify closure time.

   c. At least once per operating cycle the operability of the reactor coolant system instrument line flow check valves shall be verified.

#Due to operation limitations, the Main Steam Line Isolation Valves are exempt from Subsection 4.7.B.1.a.

##Due to plant operational limitations, the Well Cooling Water Supply/Return Valves, Reactor Building Closed Cooling Water Supply/Return Valves and the Containment Compressor Discharge and Suction valves are exempt from the requirements of subsection 4.7.B.1.b.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT

~~c. Isolate each affected penetration by use of at least one closed manual valve or blind flange.*~~

3. If Specifications 3.7.B.1, and 3.7.B.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in at least HOT SHUTDOWN within the next 12 hours and COLD SHUTDOWN within the following 24 hours.

4. Purging

a. Containment vent/purge valves (CV-4300, CV-4301, CV-4302, CV-4303, CV-4306, CV-4307, CV-4308, CV-4309, and CV-4310) may not be opened so as to create a flow path from the primary containment while PRIMARY CONTAINMENT INTEGRITY is required except for inerting, de-inerting, vent/purge valve testing, or pressure control.

~~*Isolation valves closed to satisfy these requirements may be reopened on an intermittent basis under administrative control.~~

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
E. Drywell - Pressure Suppression Chamber Vacuum Breakers	E. Drywell - Pressure Suppression Chamber Vacuum Breakers
1. Six drywell - pressure suppression chamber vacuum breakers shall be OPERABLE and closed at all times when PRIMARY CONTAINMENT INTEGRITY is required.*	1. Each drywell-pressure suppression chamber vacuum breaker shall be verified closed at least once per 7 days.
2. If one of the drywell-pressure suppression chamber vacuum breakers is inoperable for opening but known to be closed, restore the inoperable vacuum breaker to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.	2. At least once/month, cycle each drywell-pressure suppression chamber vacuum breaker through at least one cycle of full travel. Verify each position indicator OPERABLE by observing expected valve movement during the cycling test.
3. With one or more drywell - pressure suppression chamber vacuum breakers open, close the open vacuum breaker(s) within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.*	
4. With one of the position indicators of any drywell-pressure suppression chamber vacuum breaker inoperable:	3. Once/cycle, each drywell-pressure suppression chamber vacuum breaker shall be visually inspected to insure proper maintenance and operation.
a. Verify the other position indicator OPERABLE within 2 hours and at least once per 14 days thereafter or,	4. A leak test of the drywell to suppression chamber structure shall be conducted once per operating cycle.
b. Verify that the vacuum breaker is closed by determining that the total drywell to suppression pool bypass area is less than 0.2 ft^2 within 24 hours and at least once per 14 days thereafter.	
Otherwise be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.	

* except when the vacuum breaker(s) are performing their intended function.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
K. Secondary Containment Automatic Isolation Dampers	K. Secondary Containment Automatic Isolation Dampers
1. All secondary containment automatic isolation valves/dampers shall be OPERABLE at all times when SECONDARY CONTAINMENT INTEGRITY is required.	1. At least once per operating cycle, the OPERABLE isolation dampers that are power operated and automatically initiated shall be tested for simulated automatic initiation.
2. With one or more of the secondary containment automatic isolation valves/dampers inoperable, maintain at least one isolation valve/damper OPERABLE in each affected penetration that is open and within 8 hours either:	
a. Restore the inoperable valve/damper to OPERABLE status, or	
b. Isolate each affected penetration ~~by use of at least one deactivated valve/damper secured in the isolated position,~~ * or	
~~c. Isolate each affected penetration by use of at least one closed manual valve/damper or blind flange.~~ *	
3. If the above specifications cannot be met, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours and suspend reactor building fuel cask and irradiated fuel movement.	

Penetrations isolated

* ~~Isolation dampers/valves closed~~ to satisfy these requirements may be reopened on an intermittent basis under administrative control.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
L. Standby Gas Treatment System	L. Standby Gas Treatment System
1. Except as specified in Specifications 3.7.L.3 and 3.9.D, both trains of the standby gas treatment system shall be OPERABLE at all times when SECONDARY CONTAINMENT INTEGRITY is required.	1.a Annually it shall be demonstrated that pressure drop across the combined high efficiency and charcoal filters is less than 11 inches of water in the flow range of 3600 to 4000 cfm.
	b. Annually demonstrate that the inlet heaters on each train are capable of an output of at least 22 Kw.
	c. After each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing, demonstrate that air distribution is uniform within 20% of averaged flow per unit across HEPA filters.
	d. Once per operating cycle automatic initiation of each branch of the standby gas treatment system shall be demonstrated.
	e. Manual operability of the bypass system for filter cooling shall be demonstrated annually.
	f. System drains shall be inspected quarterly for adequate water level in loop seals.
	g. Each bed will be visually inspected in conjunction with the sampling in Specification 3.7.L.2.b to assure that no flow blockage has occurred.
2.a The results of the inplace cold DOP and halogenated hydrocarbon tests in the flow range of 3600-4000 cfm on HEPA filters and charcoal adsorber banks shall show ≥ 99.9% DOP removal and ≥ 99.9% halogenated hydrocarbon removal.	2.a The tests and sample analysis of Specification 3.7.L.2 shall be performed initially and then annually for standby service or after every 720 hours of system operation and following significant painting, fire or chemical release in any ventilation zone communicating with the system.
b. The results of laboratory carbon sample analysis shall show < 1.0% penetration of radioactive methyl iodide at 70% R.H., 150°F, 40 ± 4 FPM face velocity with an inlet concentration of 0.5 to 1.5 mg/m^3 inlet concentration methyl iodide.	b. Cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.
c. Fans shall be shown to be capable of operation from 1800 cfm to the flow range of 3600-4000 cfm.	c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing.

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The ability to mitigate an event that causes a containment depressurization is threatened, however, if both vacuum breakers in at least one vacuum breaker penetration are not OPERABLE. Therefore, the inoperable vacuum breaker must be restored to OPERABLE status within 72 hours based on the fact that the leak-tight primary containment boundary is being maintained.

With one valve of a vacuum breaker assembly open, the leak-tight primary containment boundary may be threatened. Therefore, it must be confirmed that at least one vacuum breaker in each affected line is closed. Failure to verify a closed vacuum breaker would imply that a breach in primary containment exists. The inoperable vacuum breakers must be restored to OPERABLE status within 72 hours. The 72-hour Completion Time takes into account the redundancy capability afforded by the remaining breakers, the fact that the OPERABLE breaker in each of the lines is closed, and the low probability of an event occurring that would require the vacuum breakers to be operable during this period.

3.7.E and 4.7.E Bases

Drywell - Pressure Suppression Chamber Vacuum Breakers

The capacity of the 7 drywell vacuum relief valves are sized to limit the pressure differential between the suppression chamber and drywell during post-accident drywell cooling operations to well under the design limit of 2 psi. They are sized on the basis of the Bodega Bay pressure suppression system tests. The ASME Boiler and Pressure Vessel Code, Section III, Subsection B, for this vessel allows a 2 psi differential; therefore, with one vacuum relief valve secured in the closed position and 6 operable valves, containment integrity is not impaired.

With one of the required SIX vacuum breakers inoperable for opening but known to be closed (e.g., the vacuum breaker is not open, and may be stuck closed or not within its opening setpoint limit, such that it would not function as designed during an event that depressurized the drywell), ~~the remaining valve~~

~~OPERABLE vacuum breakers are capable of providing the vacuum relief function~~

A Completion Time of 72 hours is allowed to restore vacuum breakers to the OPERABLE status. The 72-hour Completion Time takes into account the redundant capability afforded by the remaining breakers, reasonable time for the repairs, and the low probability of an event occurring during this period requiring the vacuum breakers to function.

An open vacuum breaker allows communication between the drywell and suppression chamber airspace, and, as a result, there is the potential for suppression chamber overpressurization due to this bypass leakage if a LOCA were to occur. Therefore, the open vacuum breaker must be closed. The 2-hour Completion Time is based on the time required to complete the alternate method of verifying that the vacuum breakers are closed, and the low probability of a DBA occurring during this period.

3.7.F and 4.7.F Bases

Main Steam Isolation Valve Leakage Control System (MSIV-LCS)

The MSIV-LCS system is provided to minimize the fission products which could bypass the standby gas treatment system after a LOCA. It is designed to be manually initiated after it has been determined that a LOCA has occurred and that the pressure between the MSIV's has decayed to less than 35 psig. The System is also inhibited from operating unless the inboard MSIV associated with the MSIV-LCS subsystem is closed and the reactor vessel pressure has decayed to less than 35 psig.

Checking the operability of the various components of the MSIV-LCS system monthly, and the motor-operated valves once every 3 months, assures that the MSIV-LCS system will be available in the remote possibility of a LOCA. Performance of a capacity test of the blowers and initiation of the entire system once per operating cycle assures that the MSIV-LCS system meets its design criteria. The testing frequency of the motor-operated valves is based on Section XI of the ASME Code. Allowance of thirty days to return a MSIV-LCS

3.7.K and 4.7.K BASES

Secondary Containment Automatic Isolation Dampers

The function of the ~~SCIVs~~ secondary containment isolation valves/dampers, in combination with other accident-mitigation systems, is to limit fission-product release during the following postulated Design Basis Accidents such that offsite radiation exposures are maintained within the requirements of 10 CFR 100 or the NRC staff-approved licensing basis. Secondary containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that fission products that escape from primary containment following a DBA, or which are released during certain operations when primary containment is not required to be OPERABLE or take place outside primary containment, are maintained within applicable limits. A controlled list of secondary containment automatic isolation dampers is located in the plant Administrative Control Procedures.

The OPERABILITY requirements for ~~SCIVs~~ secondary containment isolation valves/dampers help ensure that adequate secondary containment leak tightness is maintained during and after an accident by minimizing potential paths to the environment. These isolation devices consist of either passive devices or active (automatic) devices. Locked-closed manual valves, deactivated automatic valves secured in their closed position, blind flanges, and closed systems are considered passive devices. Two barriers in series are provided for each penetration so that no single credible failure or malfunction of an active component can result in a loss of isolation (and possibly loss of secondary containment OPERABILITY).

With one or more ~~SCIVs~~ secondary containment isolation valves/dampers inoperable, at least one isolation valve must be verified to be OPERABLE in each affected open penetration. This action may be satisfied by examining logs or other information to determine whether the valve is out of service for maintenance or other reasons.

In the event that one or more ~~SCIVs~~ secondary containment isolation valves/dampers are inoperable, either the inoperable valve/damper must be restored to OPERABLE status or the affected penetration must be isolated. The method of isolation must include the use of at least one

| isolation barrier that cannot be adversely affected by a single active
| failure. Isolation barriers that meet this criteria are a closed and
| deactivated automatic ~~sciv~~ secondary containment isolation valve/damper, a closed manual valve, or a blind flange.

Demonstrating the isolation capabilities of each power-operated and automatic ~~sciv~~ secondary containment isolation valve/damper is required to demonstrate OPERABILITY. The simulated automatic
| initiation ensures that the valve/damper will isolate as assumed in the safety
| analyses. The frequency of this SR is in accordance with the Inservice
| Testing Program.

| 3.7.L and 4.7.L BASES

| Standby Gas Treatment System

The standby gas treatment system is designed to filter and exhaust the reactor building atmosphere to the stack during secondary containment isolation conditions, with a minimum release of radioactive materials from the reactor building to the environs. Both standby gas treatment fans are designed to automatically start upon containment isolation and to maintain the reactor building pressure at approximately a negative 1/4-inch water gauge pressure; all leakage should be in-leakage. Only one of the two standby gas treatment systems is needed to cleanup the reactor building atmosphere upon containment isolation. If one system is made or found to be inoperable during reactor operation or core alterations, there is no immediate threat to the containment system performance. Thus, reactor or refueling operation(s) may continue while repairs are being made, provided the requirements of Specifications
| 3.7.L.3 and 3.9.D, respectively, are met. If neither circuit is operable, the plant is brought to a condition where the standby gas treatment system is not required.

High efficiency particulate absolute (HEPA) filters are installed before and after the charcoal adsorbers to minimize potential release of particulates to the environment and to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential release of

radioiodine to the environment. The in-place test results should indicate a system leak tightness of ≤ 0.1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of at least 99.9 percent removal of DOP particulates. The laboratory carbon sample test results should indicate a radioactive methyl iodide removal efficiency of at least 99% for expected accident conditions. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, the resulting doses will be less than the 10 CFR 100 guidelines for the accidents analyzed, as the Updated FSAR Section 15.6.6 for the loss-of-coolant accident shows compliance with 10 CFR 100 guidelines with an assumed efficiency of 99% for the adsorber. Operation of the fans significantly different from the design flow envelope will change the removal efficiency of the HEPA filters and charcoal adsorbers.

A pressure drop test across the combined HEPA filters and charcoal adsorbers will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Heater capability, and pressure drop ~~and air distribution~~ should be determined annually to show system performance capability. Annual demonstration of air distribution is not required. Changes to the flow distribution would be expected to occur after changes are made to the filters or filter housing rather than on a time-dependent basis.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated. Tests of the charcoal adsorbers with halogenated hydrocarbon refrigerant shall be performed in accordance with USAEC Report DP-1082. Iodine removal efficiency tests shall follow RDT Standard M-16-1T. (The design of the SGTS system allows the removal of charcoal samples from the bed directly through the use of a grain thief.) Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced with an adsorbent qualified according to Table 4.7-1. Tests of the HEPA filters with DOP aerosol shall be performed in accordance to ANSI N101.1-1972. Any HEPA filters found defective shall be replaced. The replacement HEPA filters should be steel cased and designed to military specifications MIL-F-51068C and MIL-F-51079A. The HEPA

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